REMARKS

Consideration of the present application is respectfully requested in light of the above amendments to the claims, the telephonic interview conducted on January 11, 2007, and in view of the following remarks. The Applicants extend their gratitude to Examiner Ruddock for her time and consideration given during the telephonic interview of January 11, 2007. Claims 1 and 18 have been amended. Claims 2, and 10-17 have been cancelled. Claims 1 and 18 are the independent claims. Claims 1, 3-9, and 18 are pending in this patent application.

Entry and consideration of this amendment and remarks are respectfully requested.

Summary of Telephonic Interview Conducted on January 11, 2007

The Applicants and the undersigned thank Examiner Ruddock for her time and consideration given during the telephonic interview of January 11, 2007. During this telephonic interview, the Applicants' representative explained that the combination of U.S. PAT. NO. 6,855,650 (hereinafter, the "Bohannon reference"), U.S. PAT. NO. 5,849,645 (hereinafter, the "Lancaster reference"), and U.S. PAT. NO. 5,007,766 (hereinafter, the "Freed reference") does not teach all of the elements recited in amended Claim 1 that was submitted to the Examiner prior to the telephonic interview.

Specifically, it was pointed out to Examiner Ruddock that the tri-lobal and multilobal fibers of the Freed reference do not define a specific cross-sectional geometry beyond three geometric structures because the technology of the Freed reference is not concerned with this level of detail for its fibers. The technology described by the Freed reference is focused on a brush-like barrier used in channels. Meanwhile, it is the specific cross-sectional geometry of multi-lobal fibers for turf reinforcement which is one focus of the Applicant's invention.

One of ordinary skill in the art recognizes that a mere verbal description of tri-lobal and multilobal fibers of the Freed reference does not provide any clear or definitive description of a cross-sectional geometry for a particular fiber. Further, this verbal description does not suggest or teach channels combined with lobes or any particular

geometry of each channel combined with a lobe. The terms, "tri-lobal" and "multi-lobal" can only imply a three projection shaped or multi-projection shaped object.

In other words, to one of ordinary skill in the art, the two words, "tri-lobal" and "multi-lobal," of the Freed reference cannot reasonably anticipate or obviate a specific and precise description of a cross-sectional geometry comprising "at least three substantially concave and smoothly curved channels separating at least three substantially convex and smoothly curved lobes," as recited in amended Claims 1 and 18.

Additionally, with respect to the rejection of Claim 1 under 35 U.S.C. §112, first paragraph, it was pointed out to Examiner Ruddock that the language at issue has been deleted from this claim. Examiner Ruddock agreed that the deletion of this language should overcome this rejection under 35 U.S.C. § 112, first paragraph.

Examiner Ruddock acknowledged the Applicants' discussion of the differences between the claimed invention and the prior art. Examiner Ruddock agreed to conduct an update search for the claimed invention as amended when a formal amendment is submitted.

The Applicants and the undersigned request Examiner Ruddock to review this interview summary and to approve it by writing "Interview Record Okay" along with his initials and the date next to the summary in the margin as required by M.P.E.P. § 713.04, page 700-202.

Claim Rejections Under 35 U.S.C. § 112, first paragraph

The Examiner rejected Claims 1-9 under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. The Examiner alleged that the claims contain subject matter that was not described in the specification. The Applicants have cancelled the language that was at issue from independent Claim 1.

That is, the language of "a more entangled fiber layer than non-woven mats comprising one-dimensional polymer fibers, to break" has been deleted without prejudice, from amended Claim 1. Accordingly, reconsideration and withdrawal of this rejection of Claims 1, 3-9 are respectfully requested.

Claim Rejections Under 35 U.S.C. § 103

The Examiner rejected Claims 1-9 and 18 under 35 U.S.C. §103 as being unpatentable over the Bohannon reference in view of the Lancaster and Freed references. The Applicants respectfully offer remarks to traverse the Examiner's rejections.

Independent Claim 1

The rejection of Claim 1 is respectfully traversed. It is respectfully submitted that the Bohannon, Lancaster, and Freed references fail to describe, teach, or suggest a turf reinforcement mat comprising the combination of: (1) at least one polymer net layer; (2) a non-woven mat comprising a plurality of (3) multi-dimensional polymer fibers, wherein a (4) cross-sectional geometry of respective multi-dimensional polymer fibers comprises (5) at least three substantially concave and (6) smoothly curved channels (7) separating at least (8) three substantially convex and (9) smoothly curved lobes, said fibers (10) breaking the flow and energy of water passing over the soil and said mat; and (11) a polymer yarn stitching said net layer to said non-woven mat, as recited in amended Claim 1.

The Bohannon Reference

The Bohannon reference describes an erosion control blanket 100 that is formed of three layers of material. The first layer is a top sheet 120 of an open-meshed material of natural or synthetic fibers. The second layer is of a loose fiber filler 140 which is arranged to form a three-dimensional matrix and provides the erosion control blanket with a required amount of loft or resiliency. The third layer is a bottom sheet 160 or open-meshed material which generally resembles the top sheet 120 or first layer in construction. Bohannon reference, column 3, lines 41-50. See a copy of Figure 3 of the Bohannon reference provided below.

FIG. 3
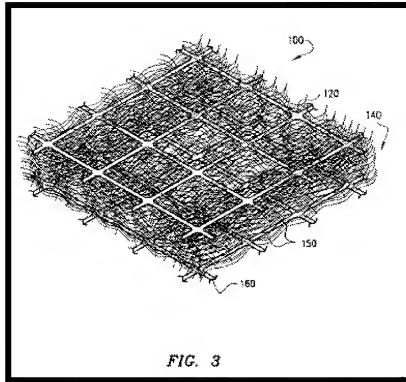
The filler material 140 of the erosion control blanket 100 is an arrangement of crimped polymer fibers 150 to create a three-dimensional matrix having a desired amount of loft and resiliency. Although the polymer fibers 150 may be arranged in various ways, a randomly dispersed loose fiber fill will generally produce a blanket with sufficient loft. In one embodiment of the present invention, the polymer fibers 150 are formed of a post-consumer polyester, namely polyethylene terephthalate (PET). Bohannon reference, column 4, lines 42-52.

The Applicants respectfully submit that the filler material of the Bohannon reference does not provide a plurality of multi-dimensional polymer fibers, wherein a cross-sectional geometry of respective multi-dimensional polymer fibers comprises at least three substantially concave and smoothly curved channels separating at least three substantially convex and smoothly curved lobes, as recited in amended Claim 1.

Instead, the filler material of the Bohannon reference is merely "an arrangement of crimped polymer fibers" without any recitation or description of the cross-sectional geometry of the fibers. The Examiner admits that the Bohannon reference does not provide any description of the geometry and/or configuration of the cross section for the

-7-

polymer fibers. To address deficiency, the Examiner relies upon the Freed reference which is discussed more fully below.

The Bohannon reference simply does not teach the specific lobe and channel structure of the multi-dimensional polymer fibers as recited in amended Claim 1. Furthermore, the Bohannon reference does not recite a polymer yarn for stitching the net layer to the non-woven mat, as recited in amended Claim 1.
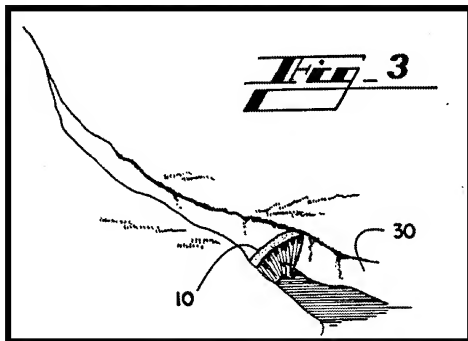
The Freed Reference

The Examiner admits that the Bohannon reference does not provide any description of the geometry of its arrangement of crimped polymer fibers. To make up for this deficiency, the Examiner relies upon the Freed reference.

The Freed reference describes a barrier where numerous strands 11 are laid adjacent one another in a substantially parallel fashion so that the barrier 10 forms a structured array of strands having a certain predetermined shape. For example, the barrier 10 has roughly the shape of a brush extending from one end 13 of the barrier to the other end 14 thereof as illustrated in Figure 1 above. Freed reference, column 3, lines 41-50. See Figure 1 of Freed provided below.

-8-
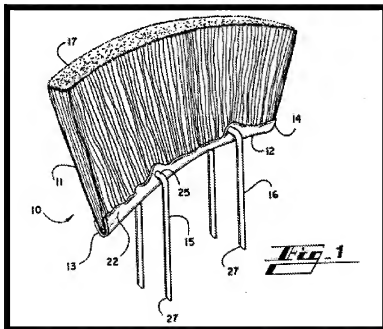
The Freed reference uses its brush-like barrier 10 in a channel 30 to substantially stop fluid flow. See Figure 3 of the Freed reference below.

The Freed reference describes its brush-like barrier 10 having a fiber configuration which is important to strand stiffness, cohesion, water adhesion and sediment filtration. The Freed reference mentions that favorable results can be obtained with round cross-section monofilament discrete fibers and rectangular cross-section slit film continuous strand sediment barriers.

However, the Freed reference, which is not concerned with fiber geometry, liquid flow at the fiber level, or the interaction between a mat, soil, and water, mentions that its brush-like design 10 can employ many different fiber geometries: such as "oval, square, hollow, tri-lobal, multilobal, fibrillated, collated, bonded, entangled, multifilaments, monofilaments, or roll embossed film yarn are practical for use with sediment barriers according to the present invention." Freed reference, column 5, line 66 – column 6, line 7.

The Freed reference does not provide any further description or illustration of the words "multilobal" or "tri-lobal" because its brush-like design 10 is not concerned with fluid flow at the fiber level and the interaction between the fibers and any surrounding soil. Opposite to the Applicants' claimed invention, the Freed reference is not concerned with turf reinforcement.

Further, one of ordinary skill in the art recognizes that "multilobal" term of the Freed reference only describes projections or divisions of an object and that "tri-lobal" term of the Freed reference only describes an object that has three projections.

In contrast, amended Claim 1 recites: a "cross-sectional geometry of respective multi-dimensional polymer fibers comprises at least three substantially concave and smoothly curved channels separating at least three substantially convex and smoothly curved lobes, said fibers breaking the flow and energy of water passing over the soil and said mat". It is apparent to one of ordinary skill in the art that the Freed reference fails to disclose specifically any lobes of the fibers in its brush-like design 10 are curved. Additionally, the Freed reference also fails to disclose any convex geometry for its lobes. Further, the Freed reference is silent with respect to any channels positioned between the lobes, and that the channels have a concave geometry.

The Lancaster Reference

The Examiner admits that the Bohannon reference fails to provide any teaching of a polymer yarn stitching a net layer to a non-woven mat. To make up for this deficiency, the Examiner relies upon the Lancaster reference.

FIG. 4
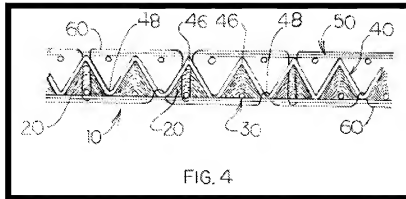
As illustrated in Figure 4 (reproduced above), the reinforced composite matting of the Lancaster reference comprises a heavy weight bottom netting 30, a fiber matrix 20, preferably comprising a plurality of strands of coconut fibers, a super heavy weight cuspated netting 40, and a heavy weight top netting 50. The bottom netting 30, cuspated netting 40 and top netting 50 are each preferably formed of ultra-violet (UV) stabilized

plastic material, to ensure long life and utility in its intended environment. Lancaster reference, column 4, lines 13-21.

The Lancaster reference fails to disclose any structure of the filler fibers beyond "a plurality of strands of coconut fibers". Thus, Lancaster fails to recite any specific or definitive cross-sectional geometry of multi-dimensional polymer fibers used as mat filler materials and does not make up for the geometrical deficiencies of the Bohannon and Freed references.

In other words, even if the Lancaster reference was combinable with the Bohannon reference and the Freed reference, the proposed combination fails to provide any teaching of any cross-sectional geometry of respective multi-dimensional polymer fibers comprising at least three substantially concave and smoothly curved channels separating at least three substantially convex and smoothly curved lobes, as recited by amended Claim 1.

In light of the differences between amended independent Claim 1 and the Bohannon, Freed, and Lancaster references, one of ordinary skill in the art recognizes that the broadest, reasonable interpretation of these three references cannot anticipate or render obvious the recitations as set forth in amended independent Claim 1. Accordingly, reconsideration and withdrawal of this rejection of Claim 1 are respectfully requested.

Independent Claim 18

The rejection of Claim 18 is respectfully traversed. It is respectfully submitted that the Bohannon, Lancaster, and Freed patents fail to describe, teach, or suggest a turf reinforcement mat comprising a combination of: (1) at least one polymer net layer; and (2) a non-woven mat attached to said polymer net layer, said non-woven mat comprising (3) multi-dimensional polymer fibers (3) wherein a cross-sectional geometry of respective multi-dimensional polymer fibers comprises at least (4) three substantially concave and (5) smoothly curved channels (6) separating at least (7) three substantially convex and (8) smoothly curved lobes, (9) said fibers breaking up the flow and energy of water passing over the soil and said mat, and (10) wherein said channels are adapted to capture (11) sediment and (12) water, as recited in amended Claim 18.

As discussed above with respect to amended Claim 1, the Bohannon, Freed and Lancaster references fail to teach the use of polymer fibers having at least three substantially concave and smoothly curved channels separating at least three substantially convex and smoothly curved lobes.

In light of the differences between amended independent Claim 18 and the Bohannon, Freed, and Lancaster references, one of ordinary skill in the art recognizes that the broadest, reasonable interpretation of these three references cannot anticipate or render obvious the recitations as set forth in amended independent Claim 18. Accordingly, reconsideration and withdrawal of this rejection of Claim 18 are respectfully requested.

Dependent Claims 3-9

The Applicants respectfully submit that the above-identified dependent claims are allowable because the independent claims from which they depend are patentable over the cited references. The Applicants also respectfully submit that the recitations of these dependent claims are of patentable significance.

In view of the foregoing, the Applicants respectfully request that the Examiner withdraw the pending rejections of dependent Claims 3-9.

CONCLUSION

The foregoing is submitted as a full and complete response to the Office Action mailed on July 31, 2006. The Applicants and the undersigned thank Examiner Ruddock for consideration of these remarks. The Applicants have amended the claims and have submitted remarks to traverse rejections of Claims 1, 3-9, and 18. The Applicants respectfully submit that the present application is in condition for allowance. Such action is hereby courteously solicited.

If the Examiner believes that there are any issues that can be resolved by a telephone conference, or that there are any formalities that can be corrected by an Examiner's amendment, please contact the undersigned in the Atlanta Metropolitan area (404) 572-2884.

Respectfully submitted,

/SPW/

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